RESPONSIVENESS SUMMARY

To EPA Comments on Proposed Title V Permit
During Official 45-Day EPA Review Period
for
Air Quality Control Permit No 1000940
Griffith Energy, LLC

The following are responses to EPA's comments of June 29, 1999:

Comment 1: *BACT for CO Emissions*

The BACT proposal for CO emissions from the gas turbines is a limit of 20 ppmvd (at 15% O_2, using a 3-hour averaging time), for operation both with and without supplemental duct firing of the heat recovery steam generators (HRSGs). EPA has accepted separate limits for operation with and without duct firing in the case of Calpine - Southpoint, which has been issued a permit with a limit of 10 ppmvd without duct firing and 35 ppmvd with duct firing. The CO limit in the proposed permit, however, is too high for several reasons. First, the proposed limit is inconsistent with the revised BACT analysis submitted by the applicant on May 17, 1999, which concludes that BACT for CO emissions is 10 ppmvd for operation of the turbines without supplemental duct firing of the HRSGs, and 20 ppmvd for operation with duct firing. In addition, page 9 of the Technical Review and Evaluation prepared by ADEQ for this permit lists BACT determinations for CO emissions from gas turbines at other recently-permitted projects. Other than the CO limit with duct firing for Calpine - Southpoint, the highest limit on this list is 15 ppmvd, and most limits are at or below 10 ppmvd.

Another justification for considering a lower BACT limit for CO emissions is the "Guidance for Power Plant Siting and Best Available Control Technology" published in June 1999 by the California Air Resources Board (CARB). An excerpt from this guidance which discusses BACT recommendations is enclosed. As seen in Table I-1 of this guidance, CARB recommends a limit of 6 ppmvd as BACT for CO emissions from combined-cycle gas turbines.

Thus, while a limit of 20 ppmvd is acceptable for operation with duct firing, there is no justification for a limit of 20 ppmvd for operation without duct firing. This permit should be revised to include the limits suggested by the applicant: 10 ppmvd without duct firing and 20 ppmvd with duct firing.

Response: The suggested change has been made in conditions I.A.6 and I.B.6 in Attachment "B" of the proposed permit.

Comment 2: *Emissions from Startup and Shutdown*

The modeling performed by the applicant in its analysis of ambient impacts from this project did not account for higher periods of emissions during startup and shutdown of these turbines. This is significant since emissions of CO and NOx are much higher during these periods than during periods of normal operation. The proposed permit, for example, contains a NOx emission rate for startup and shutdown periods of 5.2 lb/min which is 10 times the rate required for normal operation with duct firing (28.6 lb/hr) and 15 times the rate for normal operation without duct firing (21.1 lb/hr). The corresponding CO limit in this permit during startup and shutdown (124 lb/min) is 75 times higher than normal operation with duct firing (28.6 lb/hr) and 125 times higher than normal operation without duct firing (59.0 lb/hr).

A typical assumption for impact analyses recently submitted to EPA for similar facilities is 100 startups and 100 shutdowns per turbine per year. Assuming that this causes a 50% increase in facility-wide emissions (a conservative estimate), and that ambient impacts increase similarly, this facility will still not cause a violation of the NAAQS for either CO or NO_2, nor will the NO_2 increment be completely consumed. To ensure that this will be the case, the proposed permit should be revised to limit emissions during startup and shutdown periods. The permit currently limits each startup to five hours, but there is no limit on either the number of allowed startups and shutdowns or the allowable hours per year during which the facility can be in startup or shutdown mode. EPA recommends adding a limit of 100 startups and 100 shutdowns per turbine per year, as in the above assumptions. We also believe that ADEQ should require all future PSD modeling analyses to use the maximum allowable emissions when determining ambient impacts from a proposed project.

Response: The suggested change has been made in conditions I.A.1.a and I.B.1.a in Attachment "B" of the proposed permit.

Comment 3: *PM-10 Monitoring for Cooling Towers*

The proposed permit is both a construction permit and a Part 70 operating permit. To satisfy the requirements of Part 70, the permit must contain adequate periodic monitoring to assure compliance with all conditions. Thus, the permit must be revised to include monitoring which will allow the facility to demonstrate compliance with the listed PM-10 emissions rates for the cooling towers. EPA recommends requiring a monthly analysis of the total dissolved solids (TDS) in the cooling water and periodic monitoring of the water recirculation rate.

Response: The PM-10 emissions from the cooling towers are dependent upon the drift eliminators, the flow rate, and the solids in the water. ADEQ considered the periodic inspection of the drift eliminator, but the hazards associated with the maintenance of the drift eliminators is very high. It would also not be viable for the facility to perform a useful periodic monitoring of the water recirculation rate due to the variable flow rates. Instead, ADEQ will require visual inspections of the drift eliminator whenever the equipment is not operating for more than one week, or at least once per year (please refer to condition III.G in Attachment "B" of the proposed permit).

With respect to the solids in the water, the water used in the cooling towers is recycled twelve times before it is cleaned to remove the high concentration of TDS. Eighty percent of the water after the cleaning is recycled back to the cooling towers, while twenty percent is sent to an evaporation pond as waste.

After further discussions, the EPA agreed that periodic monitoring of drift eliminator stated in condition III.G in Attachment "B" of the proposed permit, is sufficient to comply with the EPA's comment.